IN THE SPECIFICATION:

Please delete paragraphs of the "DISCLOSURE OF THE INVENTION" section of the specification, beginning at page 3, line 22 and ending at page 7, line 4, and replace therewith the paragraphs as shown below:

In order to achieve the above objects, a CAD system according to the present invention includes a processing information group and a process definition group. The processing information group includes: a processed-body division which stores a part whose material substance is to be removed by a single or a series of processing operations, as a body (shape-body) for each of the process operations by pre-defined work instructions given via an input device; and a process-contents division which stores information about work contents of each process operation in relation to the body. The process definition group contains definitions of a plurality of process operations. Upon Selection from the process operations via the input device and selection of parts as CAD data to be processed via the input device in an original product body, shape information is extracted from the original product body based on the work instructions for each of the selected parts to be processed, and tools and parameters for processing the extracted shape are determined based on the selected processing operations and the extracted shape information. Processed bodies as CAD data are generated separately from the parts to be processed. The generated processed bodies are stored in the processed-body division, and the determined tools and parameters are stored in the process-contents division.

The present invention provides another CAD system which includes a processing information group and a process definition group. The processing information group includes: a processed-body division which stores a part whose material substance is to be removed by a single or a series of processing operations, as a body (shape-body) for each of the process operations by pre-defined work instructions given via an input device; and a process-contents division which stores information about work contents of each process operation in relation to the body. The process definition group contains definitions of a plurality of process operations. Upon Selection from the process operations via the input device and selection of parts as CAD data to be processed via the input device in an original product body, shape information is extracted from the original product body based on the

work instructions for each of the selected parts to be processed and tools and parameters for processing the extracted shape are determined based on the selected processing operations and the extracted shape information. Processed bodies as CAD data are generated separately from the parts to be processed, as shapes which do not match as after profiling operation or other process operations. The generated processed bodies are stored in the processed-body division, and the determined tools and parameters are stored in the process-contents division.

In addition to the above described characteristics, a variety of shapes may be defined by using combinations of the tool definition groups.

Further, a combination of a plurality of tools may be stored in a selectable-tool set as the pre-defined work instructions, for each kind of the bodies. Also, the pre-defined work instructions may be made per body, and may include a plurality of steps.

Displaying each of the bodies in a color or a pattern specific to the kind of machining will help visual identification of the work contents.

Preferably, work content data for each of the bodies stored in the process-contents division are attribute data of corresponding body data stored in the processed-body division. According to this characteristic, unlike conventions where body data and process attributes are stored per unit of process, work content data is stored as part of body data. This enables readily reference to the work contents, making possible to proceed with the operation quickly and efficiently.

Preferably, the CAD system further includes a body display control unit which, upon selection from displayed processed bodies, displays work contents related to the processed body.

Further, preferably, the system displays area differences or an interference region if there is any area difference between the original product body and the processed bodies generated in correspondence with the parts to be processed or if an interference region exists between the processed bodies. Further preferably, the area difference and the interference region are displayed in respective colors or patterns specific to the kind. This enables intuitive grasp of design mistakes, processing mistakes and so on.

Each piece of work content information stored in the process-contents division is an equivalent to a work instruction in a CAM, and deletion of any of the bodies causes deletion of the related work contents.

The CAD system may further includes body data control unit which, upon specifying and copying the body to another position, stores work contents for this another position in relation to the copy of the body.

The body data control unit may function as follows: Specifically, the process definition group may also include a plurality of the processing operations, and the body data control unit creates and displays on a specific area a body corresponding to a processing operation selected from the process definition group upon specification of a location on a drawing.

The present invention can be embodied into three-dimensional CAD systems as well as two-dimensional CAD systems. Three-dimensional display makes recognition of the body easy. The present invention can also be embodied into computer programs for executing any of the CAD systems described above, or recording medium containing the program for a computer for executing any of the CAD systems described above.

According to these characteristics of the CAD systems offered by the present invention, a part to be processed is selected, and then a body is extracted from CAD data of an original product shape. Because of this, input operation of the body has become easy. Further, process operation data for a part to be removed is generated even for a complex shape, based on the selected processing operation and the part to be processed. This drastically reduces the burden of inputting data. As a result of these, operation of the CAD/CAM system has become significantly efficient.

Further, by selecting any of the processed body, the operator can readily know the contents of processing operations, i.e. work instructions, which have been made to the body. Work contents such as tools to be used and the amount of cut can be varied conveniently. These have enabled to make instructions for more appropriate machining.

Other objects, arrangements and advantages of the present invention will become clearer from the following description.

REPLACEMENT SECTION OF

"DISCLOSURE OF THE INVENTION" WITH MARKING

In order to achieve the above objects, a CAD system according to the present invention includes a processing information group and a process definition group. The processing information group includes: a processed-body division which stores a part whose material substance is to be removed by a single or a series of processing operations, as a body (shape-body) for each of the process operations by pre-defined work instructions <u>given via an input device</u>; and a process-contents division which stores information about work contents of each process operation in relation to the body. The process definition group contains definitions of a plurality of process operations. <u>Upon</u> ~~Selection~~ <u>selection</u> from the process operations <u>via the input device</u> and <u>selection of</u> parts <u>as CAD data</u> to be processed <u>via the input device</u> in an original product body, shape information is extracted <u>from the original product body based on the work instructions</u> for each of the selected parts to be processed, and tools and parameters for processing the extracted shape are determined<u>,</u> ~~a processed bodes are generated, the~~ <u>based on the selected processing operations and the extracted shape information. Processed bodies as CAD data are generated separately from the parts to be processed. The</u> generated processed bodies are stored in the processed-body division, and the determined tools and parameters are stored in the process-contents division.

~~In addition to the above described characteristics, preferably, the CAD system further includes a body display control unit which, upon selection from displayed processed bodies, displays work contents related to the processed body.~~

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